

EXCITING NEW BREADBOARDING AND TEST EQUIPMENT

...for the
professional

...for the
hobbyist



WELCOME TO THE CSC ELECTRONICS STORE.

CSC, the company dedicated to taking the tedium out of electronic design and project building.

Until recently, designing and building electronic circuits involved hours of tedious soldering, desoldering and awkward patching on make-shift breadboards. And when finished, you faced hours of stripping to save costly components.

When it came to test equipment, high prices meant doing without or sharing one costly unit with a number of other designers.

At CSC we're working to change all that. We've already made important strides towards saving professionals and hobbyists time and money.

Our Quick Test Sockets and Bus Strips are an expandable, heavy duty solderless breadboarding system that lets you bring your ideas from sketch pad to actual circuitry quickly and easily.

And now this same convenience is available for circuits involving microprocessor or LSI chips through our new EXPERIMENTOR™ solderless breadboards that snap together in a domino pattern.

At CSC, we're proud of our record of developing new products to help the professional and hobbyist alike. And today we serve more than 250,000 customers worldwide.

Our business is based on bringing you economical, high-quality, reliable products. Each instrument, for example, is inspected, tested, calibrated, burned in (6 hours min.) and finally retested before it is packed for shipment.

And, you are protected by one of the most comprehensive guarantees in the industry.

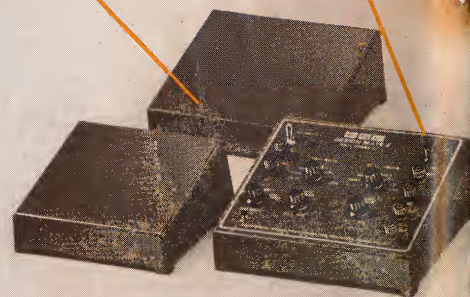
If you have any comments or suggestions, I hope you'll feel free to send them directly to me. You can be sure they'll receive the attention they deserve.

Cordially,

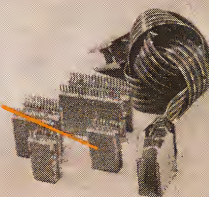


Ronald J. Portugal
Ronald J. Portugal
President

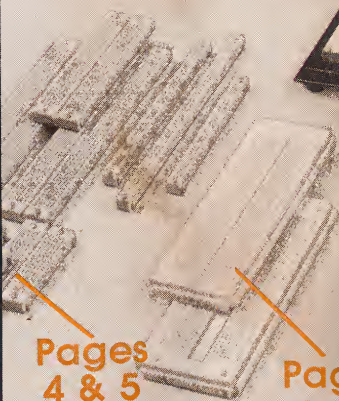
Page 18
Page 20 Design Mate
Design Mate Cases



Page 19
Proto Clip™
connectors



Pages 4 & 5
QT Sockets
and
Bus Strips



Pages 6 & 7
New!!! Experimental™
snap-together
solderless
breadboards.



THE CSC GUARANTEE
We guarantee complete satisfaction,
or your money back.
Return merchandise prepaid within
10 days for full refund.

Pages 16-17
Design Mate™
1, 2, & 3



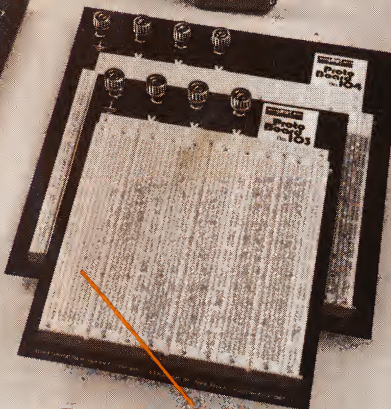
Pages 14 & 15
Logic Probe



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Logic Monitor™
digital testers



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Proto Board® breadboards

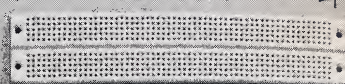


Prices and specifications are subject to change without notice.

10 Economical models for immediate shipment

Length	Hole-to-Hole	Terminals	Unit Price \$
6.5"	6.2"	118	12.50
6.5"	6.2"	20	2.50
5.3"	5.0"	94	10.00
5.3"	5.0"	16	2.25
4.1"	3.8"	70	8.50
4.1"	3.8"	12	2.00
2.4"	2.1"	36	4.75
1.8"	1.5"	24	3.75
1.4"	1.1"	16	3.25
1.3"	1.0"	14	3.00

Length
Hole-to-Hole



QT-59S



QT-59B



QT-47S



QT-47B



QT-35S



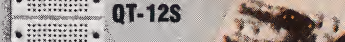
QT-35B



QT-18S



QT-12S



QT-8S



QT-7S



INSTANT SOLDERLESS BREADBOARDS

Quick Test Sockets and Bus Strips* for "push-in" circuit design.
Re-use components over and over again.

Withstands temperatures to 100°C and above for heavy-duty applications. The solderless breadboarding system with a proven track record—more than 2 million have been sold to R&D labs, educational institutions and experimenters worldwide. Contacts are encased in a tough, heat resistant housing, making these boards ideal for life testing and rugged new design concepts.

Use all standard components—and then re-use them. Quick Test Sockets and Bus Strips conform to 0.1" grid and are DIP compatible. ICs, diodes, resistors, capacitors, transistors and other components plug right in without messy, time-consuming soldering. They can be removed, ready for use in your next circuit, just as easily.

Easy Hook-up. All you need is #22-30 solid AWG wire. Use it to connect a signal source, to hook up a scope, probe or counter, to connect power and ground leads, and to interconnect components. If you have to add a wire or component, simply plug it in. You'll never burn your fingers or get solder burns. And you don't need any special patch cords, either.

Interconnections. Each terminal consists of 5 connected solderless tie points formed from pre-stressed, spring loaded, non-corrosive nickel silver alloy to ensure secure connections. All sockets are 1.32" wide. All bus strips are .36" wide. And both are .33" thick.

2 Buses of Interconnected
Terminals—5 Tie Points Each.

TOP VIEW



BOTTOM VIEW

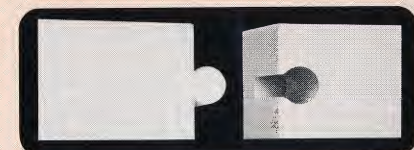
Sockets: Groups of
5 Connected Tie Points.

TOP VIEW



BOTTOM VIEW

Simple mounting. Vinyl insulated backing lets you mount Q.T. sockets anywhere without shorting. Moulded-in mounting holes let you top mount to any flat surface with 4-40 flat head screws or 6-32F self tapping screws for behind-the-panel mounting.



Exclusive SNAP/LOCK lets you add as many sockets or bus strips as your circuit requires.

**Using
microprocessors
or LSI chips?**

See our new EXPERIMENTOR
300 & 600 instant solderless
breadboard system on next
page.

* U.S. Patent Design No. 235,554

NOW BREADBOARD IN ANY DIRECTION



EXPERIMENTOR 600

.6" centers, perfect for microprocessors, clock chips, RAM's, ROM's, and PROM's.
6.0" x 2.4" overall

Just
\$10.95



EXPERIMENTOR 300

.3" centers, perfect for smaller DIP's. Ideal mate for peripheral microprocessor IC's.
6.0" x 2.1" overall

Just
\$9.95

Order your EXPERIMENTOR now

—start to plan and implement your microcomputer and other designs today—use handy order form on inside back cover.

Sockets lock together/snap apart to handle any size or shape of circuit.

Arrange EXPERIMENTORTM sockets to suit your circuit instead of rearranging your circuit to fit the breadboard.

Discover the ease and convenience of solderless breadboarding. CSC EXPERIMENTOR[®] sockets let you design, assemble and modify circuits as fast as you can push in or pull out components.

■ **Large Capacity**—Every socket has 550 solderless tie points (94 five-point terminals) plus two 40-point bus strips.

■ **Full Fan-Out**—A CSC exclusive. The only solderless breadboard sockets with full fan-out capabilities for microprocessors and other larger (0.6") DIP's.

■ **Snap-together in a domino pattern**—Arrange EXPERIMENTOR sockets to suit your circuit. Expand or contract at will.

■ **Simple Mounting**—Vinyl insulated backing lets you mount EXPERIMENTOR sockets anywhere without shorting. Moulded-in mounting holes let you top mount to any flat surface with 4-40 flat head screws or 6-32F self tapping screws for behind-the-panel mounting.

■ **Accepts All Standard Components**—Sockets conform to 0.1" grid and are DIP compatible. Accepts IC's, diodes, resistors, capacitors, transistors, etc.

■ **Easy Hook-Up**—# 22-30 solid AWG wire is all you need. Use it to connect power and ground leads to your bus strip, to interconnect components, and to connect a signal source or scope.

SPECIFICATIONS

Model	Length	Width	Center Channel	TIE POINTS (550)	
				5 Tie Point Terminals	Bus Strips
300	6.0"	2.1"	.3"	94 (470)	(2)80
600	6.0"	2.4"	.6"	94 (470)	(2)80

Both units are .375" deep



TOP
VIEW



BOTTOM
VIEW

Both models feature 94 five-point terminals (vertical lines) and two 40-point bus strips.

* U.S. Patent Design No. 235,554

The ultimate in solderless breadboarding convenience.

Whatever type of electronic circuits you work with, you can do more with CSC's solderless proto-board systems. Build, test, modify, expand, or simplify your circuit design without time consuming soldering. Compatible with all types

of components, I.C.'s, digital and linear, discrete components: resistors, capacitors, diodes, transistors, LED's etc. Interconnections between components are made with short lengths of solid hook-up wire.

Each proto-board contains: an array of QT Sockets and Bus Strips, a sturdy base plate with one or more five-way binding posts for power and ground leads, and vinyl feet prevent scratching or

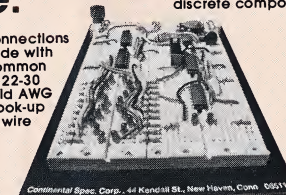
slipping on your work surface.

Except for the PB-6 and PB-100 Kits, each proto-board is preassembled, factory tested and ready for you to start designing and building.

Each has one or more 5-way binding posts

All are compatible with digital/linear ICs in TO5s, DIP packs and discrete components

All connections made with common #22-30 solid AWG hook-up wire



Aluminum base is perfect ground plane and solid surface

Vinyl feet prevent scratching

MODELS AVAILABLE WITH OR WITHOUT POWER SUPPLIES—FROM JUST \$15.95

PROTO-BOARD 6 KIT

Build this economical kit and have 630 solderless tie points, six 14-pin DIP capacity

The most compact, most economical Proto-Board. Includes easy to follow instructions. All you'll need are pliers, screwdriver, and 10 minutes.

\$15.95

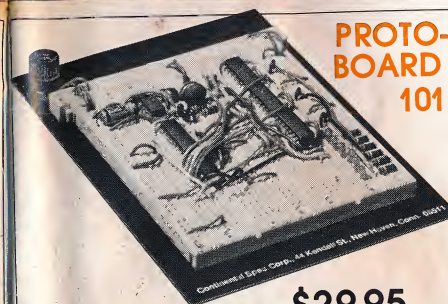


PROTO-BOARD 100 KIT

\$19.95

21% more capacity for just \$4 more
760 solderless tie points, ten 14-pin DIP capacity

Economy plus large capacity. Includes all hardware, and easy to follow instructions. All you'll need are pliers, screwdrivers and a few minutes.



PROTO-BOARD 101

\$29.95

Substantial capacity at a budget price.
940 solderless tie points, ten 14-pin DIP capacity

Our most compact and most economical fully-assembled Proto Board. Eight bus lines! Ideal for most smaller projects, including wide range of audio and smaller digital projects.

PROTO-BOARD 102

A mid-sized board at a mini price.
1240 solderless tie points, twelve 14-pin DIP capacity

Relatively compact, yet with 32% more capacity than the PB-101. Eight distribution buses! Excellent for intermediate digital needs and complex audio circuits.

\$39.95



Model Number	L x W x H	Tie-Points	IC Capacity (14-Pin DIP's)	No. of Sockets	Type	No. of 5-way Binding Posts	Weight	Price	Other Features
PB-6	6.0" x 4.5" x 1.4"	630	6	2 1	QT-47B QT-47S	4	7.0 oz.	\$15.95	Kit—10-minute assembly
PB-100	6.0" x 4.5" x 1.4"	760	10	2 1	QT-35S QT-35B	2	7.5 oz.	19.95	Kit—with larger capacity
PB-101	6.0" x 4.5" x 1.4"	940	10	2 4	QT-35S QT-35B	1	9.0 oz.	29.95	8 distribution buses, higher capacity
PB-102	7.0" x 4.5" x 1.4"	1240	12	2 3 1	QT-47S QT-47B QT-35B	1	10.0 oz.	39.95	Large capacity, moderate price

U.S. Patent Design No. 241,252

PROTO-BOARD®

Completely pre-assembled
on heavy-duty mounting plate

BIG BOARDS FOR BIG IDEAS

PROTO-BOARD®103 For advanced experimenters.

2250 solderless tie-points, twenty-four 14-pin DIP capacity.

Versatility and flexibility for all but the largest projects. Nearly double the capacity of PB-102. Ten distribution buses! Plenty of room to build calculators, interfaces, complex switching circuits, networks, and more.

Just **\$59.95**

PROTO-BOARD®104 Our largest breadboard.

3060 solderless tie points, thirty-two 14-pin DIP capacity.

Plenty of capacity for any project, plus maximum versatility thanks to its 14 distribution buses and vast array of tie-points. Plenty of room to build a CPU, encoder, complex display or just about anything you can dream up.

Just **\$79.95**

PROTO-BOARD®203

All the capacity of PB-103, plus a built-in 1% regulated 5VDC, 1A power supply with short circuit protection.

All the famous Proto-Board features, plus a fused power supply with only 10mV ripple and noise at 0.5A. Flip on the toggle switch (a pilot light indicates power) and you're ready to go. Power req.: 117VAC 50/60Hz.

Just **\$75.00**

PROTO-BOARD®203A

All the features of the PB-203, plus additional power supply flexibility. Same built-in 1% regulated short proof 5 volt 1 amp power supply as the 203 plus two additional regulated power supplies: -15 volts at 1/2 amp and +15 volts at 1/2 amp. Both internally adjustable from 10 to 16 volts (at reduced current outputs). Ripple and noise - @ 1/4 amp: less than 10mV. Load regulation better than 1%.

Just **\$120.00**

Model Number	L x W x H	No. of Solderless Tie-Points	IC Capacity (14-Pin DIP'S)	No. of Sockets	Type	No. of 5-way Binding Posts	Weight	Price	Other Features
PB-103	9.0" x 6.0" x 1.4"	2250	24	3 4 1	QT-59S QT-59B QT-47B	4	1.3 oz.	\$59.95	Even larger capacity, only 2.7" per tie-point
PB-104	9.8" x 8.0" x 1.4"	3060	32	4 7	QT-59S QT-59B	4	1.8 oz.	79.95	Largest capacity: Low cost per tie-point
PB-203	9.8" x 6.6" x 3.3"	2250	24	3 4 1	QT-59S QT-59B QT-47B	4	5.0 lbs.	75.00	Built-in 1% regulated short proof 5V, 1 amp low-ripple power supply
PB-203A	9.8" x 6.6" x 3.3"	2250	24	3 4 1	QT-59S QT-59B QT-47B	4	5.5 lbs.	120.00	Same as PB-203 plus separate 1/2-amp +15V and -15V internally adjustable (10 to 16 volts) regulated power supplies

U.S. Patent Design No. 241,252

See all I.C. outputs simultaneously • Trace dynamic and static logic signals through digital systems • Compatible with digital I.C.'s up to 16 pins • Custom designed IC Clip with nickel/silver leads provides secure contacts and easy access to IC's on high density boards.

EASY TO USE: Just clip over I.C. and watch the LEDs: 16 go/no go voltage detectors activate LED readouts when input voltage exceeds fixed (LM-1) or switch selected (LM-2) threshold levels.

EASY TO INTERPRET: LED ON—Logic 1, LED OFF—Logic 0 or open circuit, half intensity LED, dynamic signal.

BOTH A MUST FOR YOUR LAB OR TOOL KIT!

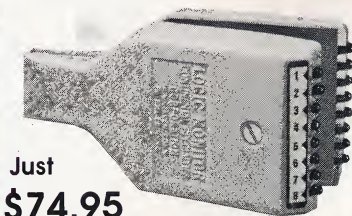
LOGIC MONITOR I

Brings ICs to life as it tests DTL, TTL, HTL and CMOS...all on one accurate monitor.

- Self powered • Self contained
- Pocket size • No adjustment or calibration • Watch signals work their way through counters, shift registers, timers, adders, flip flops, decoders, entire systems • Concentrate On Signal Flow, Input/Output Truth Tables • Forget probe grounds, pin counting and sync polarity
- Versatile • Fast • Accurate
- Indispensable. Order yours today.

Specifications

Input threshold: $2V \pm .2V$ all inputs. **Input impedance:** 100,000 ohms $\pm .5\%$ all inputs. **Voltage range:** 4 to 15 volts max across any two inputs. **Maximum current drain:** 200 ma @ 10V (15 LEDs ON). **Temperature range:** 0°C to 50°C. **Weight:** 3 oz. **Maximum dimensions:** (LxWxH) 4.0"x2.0"x1.8"



Just
\$74.95

Check logic levels
without a voltmeter or
an expensive scope.

FAST & EASY



Logic levels appear instantly on 16 large (.125" dia.), clearly marked, high intensity LEDs. Logic "1" (high voltage) turns the LED on. Logic "0" (low voltage or open circuit) LED off.

LOGIC MONITOR 2

Our second generation IC test instrument...with fully-isolated power supply to eliminate loading of test circuits.

- Selectable threshold control sets logic "1" level to proper voltage for each logic family • Visually displays gate inputs rising and falling • Lets you see pulses passing from circuit to circuit • Flip-flops may be seen changing states • Watch decoders and encoders accept and record information.

A "must" instrument for your lab or workshop
Just **\$124.95**

Logic Thresholds

CMOS: 70% of test unit $V_{cc} \pm 100mV$

HTL: 7.5 volts $\pm 100mV$

TTL: 2.4 volts $\pm 100mV$

DTL: 1.6 volts $\pm 100mV$

RTL: 1.2 volts $\pm 100mV$

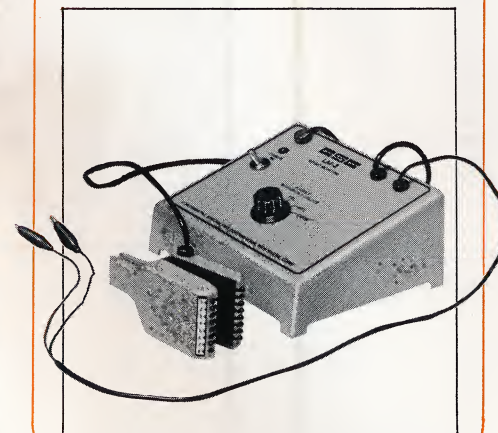
MAXIMUM VISIBLE INPUT

FREQUENCY: 30 KHz @ 50% duty cycle

INPUT POWER: 117 VAC 50/60 Hz 10 W

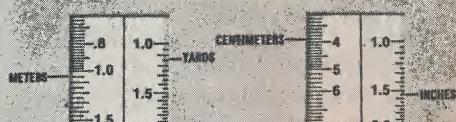
Specifications

Module	Length	Width	Height	Total Wt.
Power Supply	5.6"	6.0"	3.0"	20 oz.
Test Clip	4.0"	2.0"	1.8"	

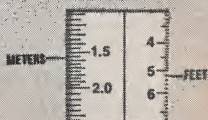


FREE

METRIC TO ENGLISH CONVERSIONS



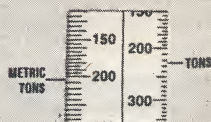
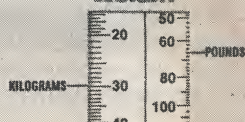
LENGTH



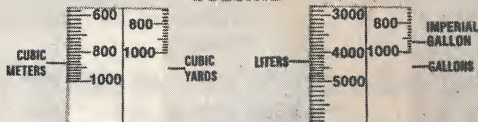
AREA



WEIGHT



VOLUME



FREE!

Metric-to-English SLIDE RULE

Now you can convert lengths,
area, weight and volume instantly.
This handsome, rugged conversion
slide rule
is yours **FREE** with a minimum
\$5.00 order!

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Postage Will Be Paid By

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44 KENDALL STREET,
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NEW HAVEN, CT 06509**

Microcomputing Sweeping the Nation

Get in on the excitement of having your own computer . . .

Over 100,000 people are now enjoying and playing those exciting T.V. games: STAR TREK, CHESS, MOON LANDER, LAS VEGAS STYLE GAMBLING . . . Figure your taxes, plan budgets, analyze investments and the stock market — do your own experiments all in the comfort of your home. Discover how to build your own computer system and how to apply it to enrich your wallet, and your leisure. Do that by reading **INTERFACE AGE**, the publication leading the way in home and small business microcomputing. Every issue edited to *bring the reader and the technology together in the simplest manner*. Each issue of **INTERFACE AGE** Magazine brings you basic microcomputing information and technique — and much, much more.

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△ TEAR OFF ALONG PERFORATION △ MOISTEN FLAP, SEAL, MAIL

24-HOUR SERVICE!

If your order arrives in the morning mail (as most do), we'll have it filled and headed your way the next day. Our 24-hour service record is over 99%, and intend to keep it that way.

THE DETECTIVE

The compact test tool that detects one-shot, low-rep-rate, narrow pulses you might miss... even with a fast scope.



Just
\$44.95

Just connect the clip leads to the circuit's power supply. Set the Logic Family Switch to TTL/DTL or CMOS/HTL. Now you're ready to touch the probe tip to the node under test, and get an instant picture of circuit conditions.

Here's how LP-1 works

LP-1 combines the function of level detector, pulse detector, pulse stretcher and memory to detect and make visible one-shot, low-rep-rate, narrow pulses. The kinds that are nearly impossible to see, even with a fast scope. Easily detects pulses as short as 50 nanoseconds, stretches them to 1/3 second and displays them on the PULSE LED.

Setting the PULSE MEMORY switch to MEMORY allows single-shot and low-rep-rate events to be stored indefinitely.

While high-frequency (5-10 MHz) signals cause the "pulse" LED to blink at a 3 Hz rate, there is an additional indication with unsymmetrical pulses: Duty cycles less than 30% will cause the LO LED to light, while duty cycles over 70% will light the HI LED.

In all modes, high input impedance (100K) virtually eliminates loading problems, and impedance is constant for all states. Additional features include over-voltage and reverse polarity protection. LP-1 is housed in a rugged, high-impact plastic case with strain-relieved power cables, and is built to provide reliable, day-in, day-out service for years to come.

Specifications

INPUT IMPEDANCE

100,000 Ohms

THRESHOLDS

(Switch Selectable)

Logic 1 Thresholds (HI-LED)

DTL-TTL

HTL-CMOS

Logic 0 Thresholds (LO-LED)

2.25V ± .15V

70% V_{CC} ± 10%

0.80V ± .10V

30% V_{CC} ± 10%

MIN. DETECTABLE PULSE WIDTH

50 Nanosec.

MAX. INPUT SIGNAL FREQUENCY

10 MHz

PULSE DETECTOR (PULSE LED) (Switch Selectable)

High Speed pulse train or single events (+ or - transitions) activate 1/3 sec. pulse stretcher.

PULSE MEMORY (PULSE LED) (Switch Selectable)

Pulse or Level transition detected and stored until reset.

INPUT OVERLOAD PROTECTION

± 50V continuous 117VAC for less than 15 sec.

POWER REQUIREMENTS

5 Volt V_{CC} .30 Ma

15 Volt V_{CC} .40 Ma

36 Volts max. with power lead reversal protection

OPERATING TEMP

0° to 50° C

PHYSICAL SIZE LxWxD

6 1/2" x 4 1/2" x 0.7"

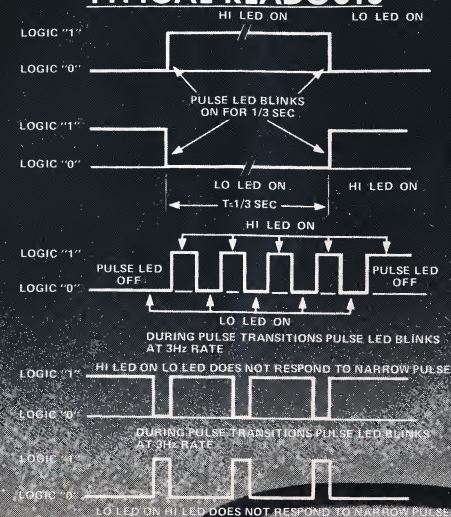
WEIGHT

3 oz

POWER LEADS

24" with color coded insulated caps

TYPICAL READOUTS



Rugged high impact plastic case—Built to take it...in the lab or in the field

HI/LO LED's—Display level of signal activity at node under test (HI-logic "1", LO-logic "0")

Non-corrosive nickel-plated probe tip and clip leads—For reliable contacts and maximum life

PULSE LED—Indicates positive and negative pulse and level transitions. LP-1 stretches pulses as narrow as 50 nano-seconds to full 1/3 sec. (3 Hz pulse rate)

PULSE/MEMORY Switch—PULSE position detects and stretches pulses as narrow as 50 nanoseconds to 1/3 sec. Switch to MEMORY and it stores single shot and low-rep-rate events indefinitely; HI/LO LED's operate independently.

Logic Family Switch—TTL/DTL or CMOS/HTL matches Logic "1" and "0" levels, for greater versatility. High Input Impedance—100K virtually eliminates circuit loading problems and is constant in both "0" and "1" states.

DESIGN MATE™ 1 CIRCUIT DESIGNER

Design unusual circuits fast... with power

HERE IT IS! CSC's basic circuit designer. Test ANY electronic circuit. Solid #22-30 AWG wire interconnects any discrete component without solder. Resistors. Transistors. Linear/Digital ICs in TO-5 DIP packages (from 8-40 pins). And more. Components fit directly into sockets and bus strips. Instantly and easily. Plus, variable regulated power supply gives 5-15V DC up to 600 ma (9 watts). Now that's design flexibility.

You can even monitor DM-1's internal power supply or external circuits thanks to the built-in 0-15V voltmeter. If you're into electronics, DM-1 is a must for your laboratory. It comes to you completely wired, tested and ready to use for only...

\$54.95

Specifications

Power Supply: Output: 5-15V at 600 ma. Ripple and Noise: less than 20 mv at full load. Load and Line Regulations: better than 1%. **Meter:** 0-15VDC-5%. **Sockets:** 1 QT-59S, 2 QT-59B, 2 power supply 5-way binding posts, 2 meter 5-way binding posts. **Weight:** 3 lbs. **Power Requirements:** 117 VAC @ 60 Hz, 12 watts.

DESIGN MATE™ 2 LOW COST FUNCTION GENERATOR

Clean, accurate waveforms. Variable amplitude, variable frequency controls.

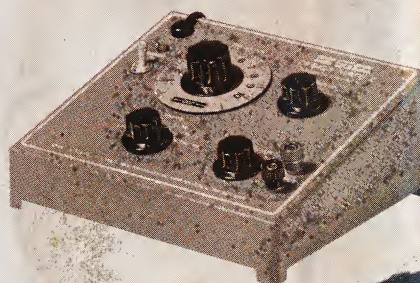
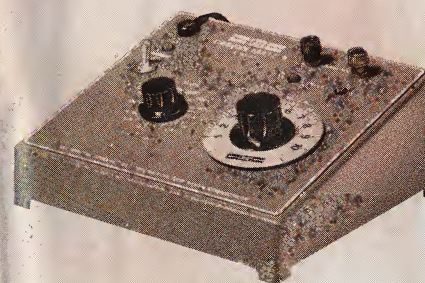
Troubleshooting? Design Testing? Here's the only function generator that gives you all the signal source capacity you need...and, at a very modest price! DM-2 is a 3-waveform function generator, with a short-proof output amplifier providing both variable signal amplitudes and constant output impedance.

Completely wired, tested, calibrated and ready to test anything from audio amplifiers, op-amp and educational laboratory designs to complex industrial laboratory projects. It includes easy-to-read instruction/operations manual with application notes, operation theory and lots more. DM-2 works hand-in-hand with DM-1 for total versatility...but it costs only...

\$69.95

Specifications

Frequency Range: 1 Hz to 100 kHz in Five Ranges: 1-10 Hz, 10-100 Hz, 100-1000 Hz, 1-10 kHz, 10-100 kHz. **Dial Accuracy:** Frequency accurate to 5% of dial setting, calibrated at 10 Hz, 100 Hz, 1 kHz and 10 kHz. **Wave Forms:** Sine wave less than 2% THD over frequency range; Triangle wave linearity, better than 1% over range; Square wave rise and fall times less than 0.5 micro seconds with 600 ohms-20 pf termination. **Output Amplitude:** (all wave forms) variable-0.1V to 10V peak to peak into open circuit. **Output Impedance:** 600 ohms-constant over amplitude and frequency range. **Weight:** 2.2 lbs. **Power requirements:** 117V AC @ 60 Hz, 5 watts.



THE TESTING GROUND

Laboratory-grade assembled. Detailed or interfaced

test instruments at affordable prices. Completely instructions. Ready to use. Use them independently to solve complex problems...fast.

DESIGN MATE™ 3 R/C BRIDGE

Save time...measure and select capacitors and resistors to better than 5%—instantly.

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Includes an extensive instruction/applications manual and operational theory too...all for only...

\$59.95

Specifications

Resistance Range: 10 ohms to 10 megohms-Six Ranges: 10-100 ohms, 100-1000 ohms, 1K-10K ohms, 10K-100K, 100K to 1 megohm, 1 megohm to 10 megohms. **Capacitance Range:** 10 pFd to 1 mFd-Five Ranges: 10-100 pFd, 100-1000 pFd, .001 to .01 mFd, .01 mFd to .1 mFd, .1 to 1.0 mFd. **Null Detector:** Two high intensity red LEDs with high/low markings. **Accuracy:** Better than 5% of null Dial and range switch setting. **Weight:** 2 lbs. **Power Requirements:** 117 VAC @ 60 Hz 3 watts.

Each DESIGN MATE measures 6.75"L x 7.5"W x 3.25"H

Here's a great opportunity to buy several instruments for what you'd expect to pay for one. Use handy order form on inside back cover.

THE INDISPENSABLE

Precision, versatility and flexibility like you'd expect from a laboratory instrument, at a price low enough for professionals and hobbyists alike. Indispensable for anyone involved with digital circuitry—from R&D through quality control, production testing, maintenance and troubleshooting. Use the DM-4 wherever a source of clean, crisp, fast output pulses, compatible with virtually all logic families and discrete circuits, is needed.

Use the DM-4 as a clock source, delayed pulse generator, synchronous clock source, manual system stepper, pulse stretcher and for use as a pulse burst generator—interconnect two DM-4s. All this versatility, and the price is an incredibly low...

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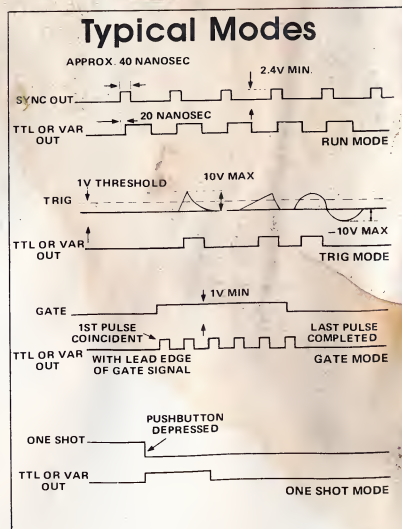
DESIGN MATE™ 4 PULSE GENERATOR



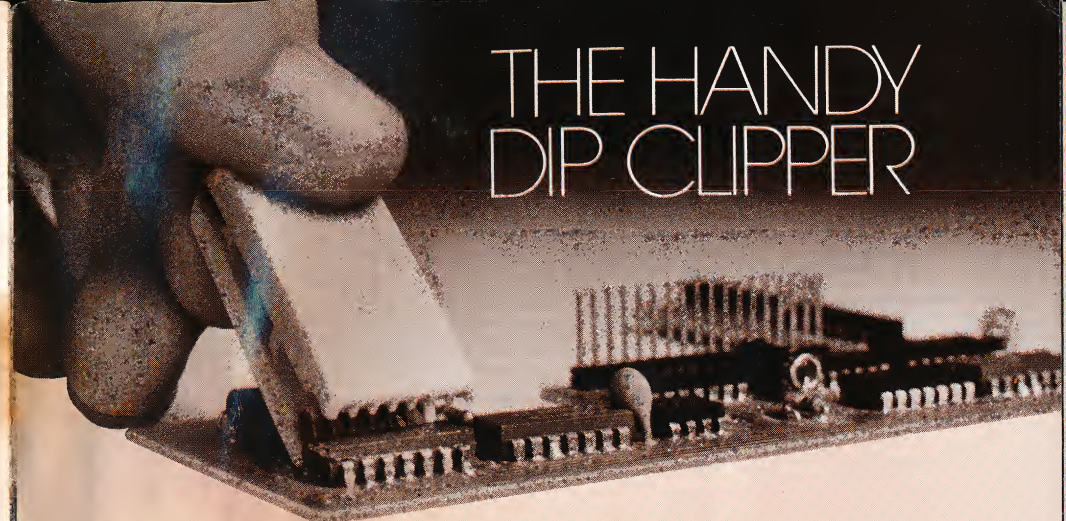
Specifications

Frequency Range: 0.5 Hz to 5 MHz. **Pulse Width and Spacing Controls:** 100 nanosec to 1 sec, in 7 overlapping decade ranges. A single-turn vernier control provides continuous adjustment between ranges. **Duty Cycle:** 10% to 100%; adjustable over entire pulse width/spacing range, 100 nanosec "ON" 1 sec "OFF" to 1 sec "ON" and 100 nanosec "OFF." **Operating Modes:** **RUN**—0.5 Hz to 5 MHz as per width/spacing and amplitude control settings. **TRIG**—DC to approx. 10 MHz. **Input requirements:** Sine waves 2 VP-P; pulses 1V peak, > 40 nanosec wide; maximum input $\pm 10V$. (Input Impedance: Approx. 10 K Ω DC coupled). **GATE:** Synchronous gating. Leading edge of gate signal turns generator "ON." Last pulse is completed, even if gate ends during pulse. **Input requirements:** Same as "TRIG" Mode. **ONE-SHOT** Pushbutton for single pulse. Output pulse occurs each time pushbutton is pressed. **OUTPUTS:** **VAR OUT** Amplitude 0.1-10V positive. **Rise/fall time** Less than 30 nanosec. **Impedance** 400 Ω max. **TTL OUT** Fan-out 40 TTL Loads. **Sink** 64 milliamps-0.8V max. **Rise/fall time** Less than 20 nanosec. **SYNC OUT** Pulse width Approx. 40 nanosec. Other sync pulse spec's same as TTL out. **Pulse lead time** Sync pulse leads outputs by approx. 20 nanosec. **POWER** 117 VAC $\pm 10\%$, 50/60 Hz, 5 watts. **SIZE (LxWxH)** 6.75" x 7.5" x 3.25". **WEIGHT** 2 lbs.

pulse source
for design,
trouble shooting
and testing
compatible with
all major logic
families



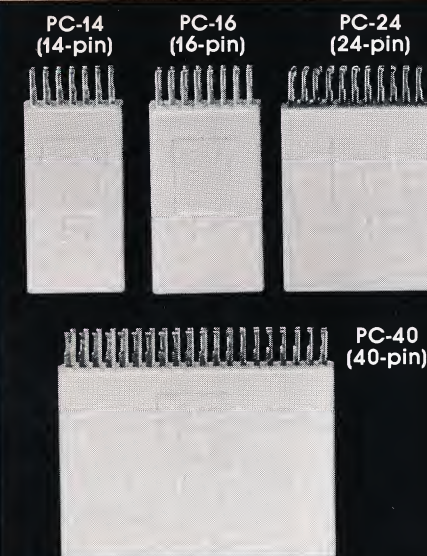
THE HANDY DIP CLIPPER



IC test clips for foolproof, short-proof, power-on circuit testing

Wherever you use DIP's, you need Proto-Clip™ connectors...the easy clip-on way to bring up leads from crowded circuit boards. They'll pay for themselves in time and components saved. Just squeeze the two ends together, clip them over a DIP, and release.

Available with or without cables for 14, 16, 24 and 40-pin DIP's. Factory assembled and tested Proto-Clips with cables—simplify IC connections to other IC's, to boards, to test fixtures, and even to interconnect Proto-Boards. Available with connectors at one or both ends. Cables are rated to 150V at 105°C. Conductors are #28AWG stranded conductors with PVC insulation.



Individual Proto-Clips

PC-14 (14-pin)	PC-16 (16-pin)	PC-24 (24-pin)	PC-40 (40-pin)
\$4.50	\$4.75	\$8.50	\$13.75

Proto-Clips with pre-wired cables

Model No.	Cable length inches	Price Single clip	Price Dual clip	Model No.	Cable length inches	Price Single clip	Price Dual clip
PC-14-	18	\$7.75	\$14.75	PC-24-	18	\$12.25	\$25.25
PC-14-	24	8.00	15.00	PC-24-	24	12.50	25.50
PC-14-	36	8.50	15.50	PC-24-	36	13.00	26.00
PC-16-	18	8.50	16.00	PC-40-	18	21.00	42.00
PC-16-	24	8.75	16.25	PC-40-	24	21.25	42.25
PC-16-	36	9.25	16.75	PC-40-	36	21.75	42.75



*U.S. Pat. No. 3,914,007

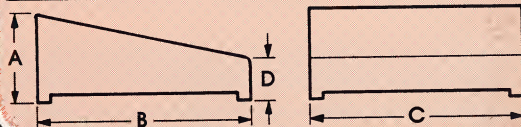
THE GREAT CASE

Perfect homes for your custom electronic projects

Made from high-impact insulated plastic, these one-piece sloping-panel cabinets with metal bottom plate and mounting screws, are identical in color to our popular Design-Mate series. For the hobbyist, a small pilot hole and hand reamer or file covers 90% of mounting problems. Advanced or industrial users can drill, rout, and machine to fit more complex mounting needs. This high-impact plastic is much easier to cut than metal. The perfect cabinet to house all types of test equipment.

Specifications

DIMENSIONS					
MODEL	A	B	C	D	Weight
DMC-1	3.25"	6.75"	7.5"	1.5"	12 oz.
DMC-2	3.0"	5.63"	6.0"	1.5"	10 oz.



DMC-1 Identical in size to cabinets used for instruments in our popular DESIGN MATE series



Just \$5.50

DMC-2

All the features of the DMC-1, but slightly more compact

Just \$4.50

Priced low, so you can order several and have them on hand for future projects.

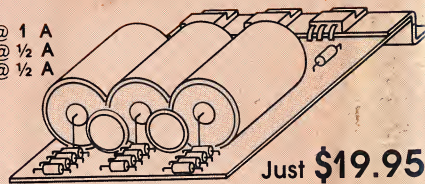
Ideal for amplifiers, transmitters, test instruments, power supplies, D.V.M.s, etc.

3 on 1 regulated power supply board

Supplies are completely isolated and stackable. Each has independent Diode Bridge AC input and separate ground and HOT lead.

FACTORY ASSEMBLED AND TESTED
— comes with complete circuit and parts layout drawings.

5 V @ 1 A
9-16 V @ 1/2 A
9-16 V @ 1/2 A

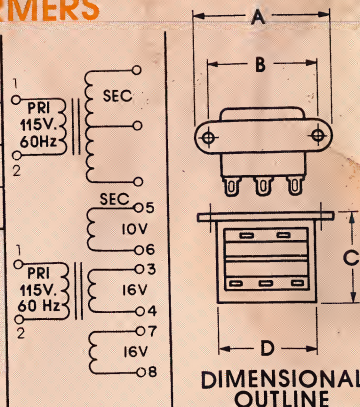


Just \$19.95

See T5 below for mating transformer.

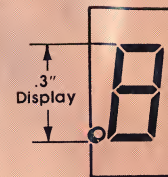
POWER TRANSFORMERS

TYPE	A	B	C	D	PRICE
T ₁ 12.6 V. C.T. @ 0.2 A.	2 1/16	1 3/4	1 3/16	1 5/8	\$4.00
T ₂ 16 V. C.T. @ 0.4 A.	2 3/8	2	1 3/8	1 11/16	4.00
T ₃ 16 V. C.T. @ 1.5 A.	3 1/4	2 13/16	1 15/16	2 5/16	6.00
T ₄ 24 V. C.T. @ 0.25 A.	2 3/8	2	1 3/8	1 11/16	4.00
T ₅ 10 V. C.T. @ 1.7 A. TERMINALS 3+4	3 3/4	3 9/16	2 1/4	2 11/16	10.00
16 V. C.T. @ 0.85 A. TERMINALS 5+6					
16 V. C.T. @ 0.85 A. TERMINALS 7+8					



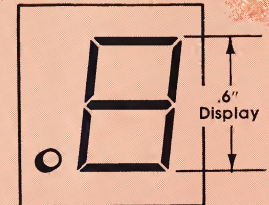
DIMENSIONAL OUTLINE

COMPONENTS FOR HOBBYISTS AND EXPERIMENTERS



SEVEN SEGMENT LED DISPLAYS

DL 707 COMMON ANODE
DL 702 COMMON CATHODE
PRICE \$1.40



DL 747 COMMON ANODE
DL 750 COMMON CATHODE
PRICE \$2.25

0.125" HIGH INTENSITY "RED" LED's



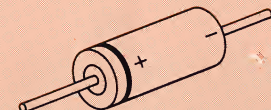
PART NO. LD-12 PRICE 12/\$2.50



TRIM POTS
P.C. MOUNT
.2 Watts
\$2.50/Pack

QTY.	DESCRIPTION	PART NO.
6	1000 Ω	6-010
6	2500 Ω	6-025
6	5000 Ω	6-050
6	10,000 Ω	6-100
6	50,000 Ω	6-500

POWER SUPPLY FILTER CAPACITOR 25 V.D.C. AXIAL LEAD



DESCRIPTION	PART NO.	PRICE
470 Mfd.	470-4	4/\$2.00
1000 Mfd.	1000-4	4/\$2.50
2200 Mfd.	2200-2	2/\$2.50

DIODES

SILICON RECTIFIERS
SIGNAL DIODES
ZENER DIODES
ZENER DIODES
ZENER DIODES

IN4001
IN4148
IN751A
IN4742
IN4744

50VPIV
75VPIV
5.1 V
12 V
15V

1 AMP
10 ma
400 mw.
1 Watt
1 Watt

12/\$1.00
15/\$1.00
4/\$1.00
4/\$1.00
4/\$1.00

I.C. REGULATOR
5 V. 3 Terminal
1 Amp. Regulator

PART NO. 7805



Price 3/\$5.00

Low Power Schottky Integrated Circuits

PART NO.	DESCRIPTION	PRICE	PART NO.	DESCRIPTION	PRICE
74LS00	Quad 2-Input NAND Gate	\$.41	74LS138	3-to-8 Line Decoder/ Demultiplexer	\$ 1.01
74LS02	Quad 2-Input NOR Gate	.41	74LS139	Dual 2-to-4 Line Decoder/Demultiplexer	1.01
74LS04	Hex Inverter	.43	74LS155	Dual 2-to-4 Line Decoder/Demultiplexer	1.15
74LS08	Quad 2-Input AND Gate	.41	74LS157	Quad 2-Line to 1-Line Data Selector/Multiplexer (Non-Inverting)	1.22
74LS10	Triple 3-Input NAND Gate	.41	74LS175	Quad D-Type Edge- Triggered Flip-Flop	1.40
74LS11	Triple 3-Input AND Gate	.41	74LS192	Synchronous Decade Up/Down Counter	1.01
74LS20	Dual 4-Input NAND Gate	.41	74LS193	Synchronous 4-Bit Binary Up/Down Counter	1.13
74LS21	Dual 4-Input AND Gate	.41	74LS258	Quad 2-Line to 1-Line Data Selector/Multiplexer with 3-State Outputs (Inverting)	1.13
74LS22	Dual 4-Input NAND Gate with Open Collector Outputs	.41	74LS367	Hex Bus Driver with 3-State Outputs	.79
74LS27	Triple 3-Input NOR Gate	.45	74LS368	Hex Bus Driver with 3-State Outputs	.79
74LS30	8-Input NAND Gate	.41			
74LS32	Quad 2-Input OR Gate	.45			
74LS38	Quad 2-Input NAND Buffer with Open Collector Outputs	.45			
74LS74	Dual D-Type Positive Edge-Triggered Flip-Flop	.54			
74LS90	Decade Counter	1.06			
74LS132	Quad 2-Input NAND Schmitt Trigger	.95			

CMOS Integrated Circuits

PART NO.	DESCRIPTION	PRICE	PART NO.	DESCRIPTION	PRICE
CD-4000	Dual 3 Input NOR Gate + Inverter	\$.27	CD-4040	12 Stage Binary/ Ripple Counter	\$ 2.14
CD-4001	Quad 2 Input NOR	.27	CD-4041	Quad True/ Complement Buffer	1.24
CD-4002	Dual 4 Input NOR	.27	CD-4042	Quad Clock "D" Latch	1.13
CD-4007	Dual Complementary Pair & Inverter	.27	CD-4043	Quad Three State R/S Latch NOR	1.01
CD-4009	Hex Buffers/Converters- Inverting	.79	CD-4044	Quad Three-State NAND R/S Latch	1.01
CD-4010	Hex Buffers/Converters- Non-Inverting	.79	CD-4047A	Low-Power Monostable/ Astable Multivibrator	.45
CD-4011	Quad 2 Input NAND	.27	CD-4049	Hex Buffer, Inverting	.56
CD-4012	Dual 4 Input NAND	.27	CD-4050	Hex Buffer, Non-Inverting	.61
CD-4013	Dual D Flip-Flop	.52	CD-4051	8-Channel Analog Multiplexer/Demultiplexer	1.69
CD-4014	8 Stage Static Shift Register	1.46	CD-4052	Dual 4-Channel Analog Multiplexer/Demultiplexer	1.69
CD-4016	Quad Analog Switch/ Quad Multiplexer	.47	CD-4053	Triple 2-Channel Analog Multiplexer/Demultiplexer	1.69
CD-4017	Decade Counter	1.46	CD-4056	Liquid Crystal Display Drivers	1.91
CD-4018	Preset/Divide by N Counter	1.46	CD-4060	14-Stage Ripple-Carry Binary Counter/Divider and Oscillator	1.91
CD-4019	Quad AND/OR Select	.43	CD-4066	Quad Bilateral Switch	1.24
CD-4021	8 Stage Static Shift Register	1.80	CD-4069	Hex Inverter	.56
CD-4023	Triple 3 Input NAND	.27	CD-4071	Quad 2-Input OR Gate	.27
CD-4024	7 Stage Binary Counter	1.35	CD-4076	Quad "D" Three State (Quad Latch)	1.80
CD-4025	Triple 3 Input NOR	.27			
CD-4027	Dual J-K Flip-Flop	.72			
CD-4028	BCD/Decimal Decoder	1.35			
CD-4029	Preset Up-Down Counter	1.69			
CD-4030	Quad Exclusive OR	.27			
CD-4035	4 Stage Parallel In/ Parallel Out Shift Register	1.80			

All I.C.'s are provided with logic diagrams and pin-out drawings.

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